Puck Off

Operation & Service Manual

040-0161-01 Rev A

- **Read this manual before use.**
- **Keep this manual with the machine at all times.**

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Preface

Safety

Please read this page before preparing your arcade cabinet for game play.

The following safety instructions apply to all game operators and service personnel. Specific warnings and cautions will be included throughout this manual.

Use the following safety guidelines to help protect the system from potential damage and to ensure your personal safety:

- Make sure that the switch on the back of the computer is set to match the AC power in use at your location:
  - 115 volts / 60Hz in most of North and South America and some Far Eastern countries such as Japan, South Korea and Taiwan
  - 230 volts / 50Hz in most of Europe, the Middle East and the Far East
- To help prevent electric shock, plug the system into a properly grounded power source. These cables are equipped with 3-prong plugs to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension cable, use a 3-wire cable with properly grounded plugs.
- To help protect your system from sudden increases and decreases in electrical power, use a surge suppressor, line conditioner or Uninterruptible Power Supply (UPS).
- Be sure nothing rests on the system's cables and that the cables are not located where they can be stepped on or tripped over.
- Keep your system far away from radiators and other heat sources.
- Do not block cooling vents.

Precautions for Game Operation

- To avoid injury and accidents, people who fall under the following categories should not play the game:
  - Those who need assistance when walking.
  - Those who have high blood pressure or a heart problem.
  - Those who have experienced muscle convulsions or loss of consciousness when playing a video game or similar activities.
  - Those who have trouble in the neck or spinal cord.
  - Intoxicated persons.
  - Pregnant women.
  - Persons susceptible to motion sickness.
  - Persons who do not abide by the warning labels on the game.
- A player who has never been adversely affected by light stimulus might experience dizziness or headache when playing the game. Small children can be especially susceptible to these conditions. Caution guardians of small children to keep watch over their children during play.
- Instruct those who feel sick during play to see a doctor.
- To avoid injury from falling objects, and electric shock due to spilled drinks, instruct players not to place heavy items, food, or drinks on the product.
- To avoid electric shock or short circuit, do not allow customers to put hands and fingers or extraneous matter in the openings of the product.
- To avoid risk of injury from falling, immediately stop customers from leaning against or climbing on the product.

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Warnings

To avoid electrical shock, unplug the cabinet before performing installation or service procedures.

If the power cord is damaged, it must be replaced by the equivalent power cord available from GLOBAL VR or your distributor.

GLOBAL VR® assumes no liability for any damages or injuries incurred while setting up or servicing the cabinet. Only qualified service personnel should perform installation or service procedures!

Environmental Conditions

Cabinet is intended for indoor use only. Be sure to keep the cabinet dry and maintain operating temperatures of 59°—86°C (15°—30°F).

FCC Notices (United States)

Electromagnetic Interference (EMI) is any signal or emission radiated in free space or conducted along power or signal leads, that endangers the functioning of radio navigation or other safety service, or that seriously degrades, obstructs, or repeatedly interrupts a licensed radio communications service. Radio communications services include, but are not limited to, AM/FM commercial broadcast, television, cellular services, radar, air-traffic control, pager, and Personal Communication Services (PCS). These licensed services, along with unintentional radiators such as digital devices (including computer systems) contribute to the electromagnetic environment.

Electromagnetic Compatibility (EMC) is the ability of items of electronic equipment to function properly together in the electronic environment. While this computer system has been designed and determined to be compliant with regulatory agency limits for EMI, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference with radio communications services, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Re-orient the receiving antenna.
- Relocate the cabinet relative to the receiver.
- Plug the game into a different outlet so that the computer and the receiver are on different branch circuits.

If necessary, consult a Regulatory EMC representative of GLOBAL VR® or an experienced radio/television technician for additional suggestions. You may find the FCC Interference Handbook, to be helpful. It is available from the U.S. Government Print Office, Washington, DC 20402.

This device has been tested and complies with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instruction manual, it may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

Operation is subject to the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Chapter 1 — Introduction

Puck Off: All the Fun of Shuffleboard Without the Table

Puck Off takes the game of shuffleboard to a whole new level. Not only does it include traditional shuffleboard, but also 3 NEW game styles with addictive game play. Players can challenge the 8 animated character opponents with various difficulty levels, or play against friends in 2-Player Mode.

Shot Shaping lets players use the trackball to influence the direction of their puck as it slides down the table. This special feature makes the game even more fun to play.

Figure 1. Examples of Conversion Cabinets

Game Features:

- Traditional Shuffleboard plus 3 New Game Styles
- Over 60 Customizable pucks (weights)
- Single Player Practice Mode with RPM Gauge
- Challenge Friends in 2-Player Mode
- Challenge players across the world in Remote Player Challenge
- 8 Animated Character Opponents with various difficulty levels
- Installs easily into most trackball cabinets

Hardware Features

- Pentium® Dual-Core Processor
- NVIDIA® Graphics Card
- 512 Megabytes RAM
- Supports VGA or EGA Monitor
- Supports Dollar Bill Validator

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Chapter 2 — Setting up your Internet Connection

To use the online gameplay features and download software updates for Puck Off, you will need to connect the cabinet to a Broadband Internet connection (either DSL or Cable Modem). You must set up your connection with a local Internet Service Provider (ISP). Once the cabinets are connected to the Internet, players will be able to link to each other and remote players.

If your location has an existing broadband network (used for arcade cabinets and/or office computers), you can connect your Puck Off cabinets to the same network. See the next page for examples of typical network arrangements.

Here are some tips that may help you when working with your broadband Internet Service Provider (ISP) to set up service for your location:

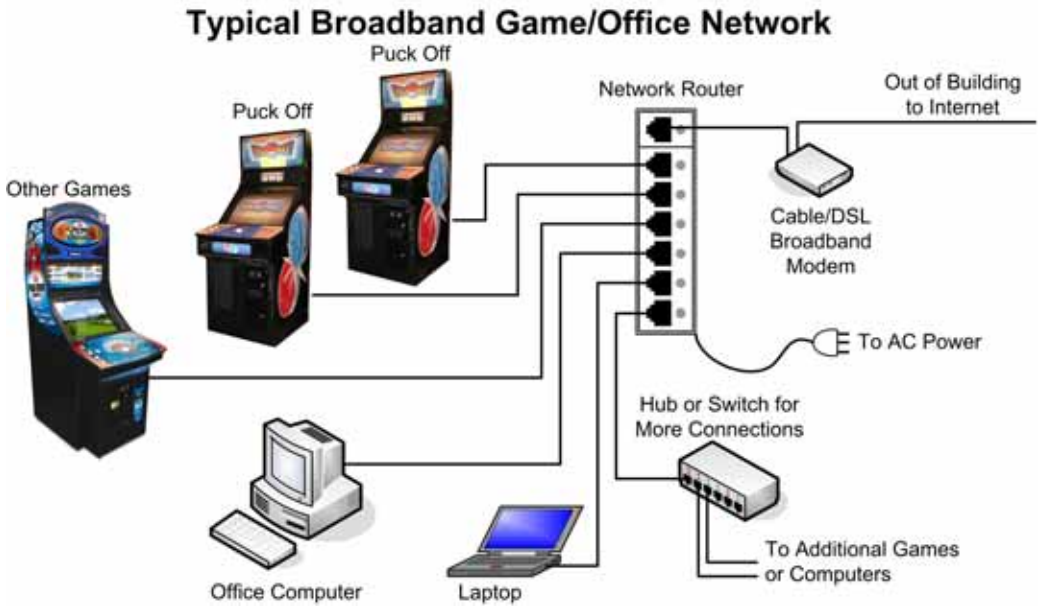
- You **do not** need a Static IP Address. A Dynamic IP address is fine, and usually costs less.
- In areas where lightning strikes are common, a Cable modem can be more reliable than DSL.
- Most ISPs have a packaged deal where they will sell you a Cable/DSL router with your service, and provide tech support to help get you connected to the Internet.
- When setting up the Cable/DSL router you will need to connect a computer (a laptop is useful for this) to set up the connection. (You cannot use the Puck Off computer for this purpose.)
- The Cable/DSL router should be set up to be constantly connected to the Internet.

Connecting Puck Off to the Internet

1. Set up your broadband Internet connection as directed by your ISP. Once everything is set up, and can go online with a computer, you are ready to connect the Puck Off cabinet.
2. Power off the Puck Off cabinet, and then connect an Ethernet cable to the System Computer, or the Ethernet connector at the back of the cabinet that is connected to the System Computer.
3. Connect the other end of the Ethernet cable to one of the LAN or Local ports on the Cable/ DSL router, or an Ethernet Hub linked to the Cable/DSL router.

   Important: If you need additional ports, use a Network Switch or Hub. **Do not** use more than one DSL/Cable Router in your network. The router must connect directly to the Internet Modem for DHCP (automatic IP Address assignment) to function properly.
4. Make sure the Cable/DSL router is powered on, and then power ON the Puck Off cabinet.
5. Repeat the previous steps for each cabinet you wish to connect.
6. Once the cabinet is connected to the Cable/DSL router and powered on, press the Operator **Test** button to open the Operator Menu.
7. On each cabinet, select **Diagnostics** from the Operator Menu, and then select **Server Status**.
   - Make sure the text displayed on the Server Status screen is green. Red text indicates a connection problem.
   - Verify that each cabinet has an IP Address. If the IP address displayed is 127.0.0.1, this means the cabinet could not get an IP address from the router and has assigned itself the default IP address. If this happens, verify the network settings on the router and make sure it is correctly set up to assign IP Addresses using DHCP.

Important: Do not connect Puck Off cabinets directly to each other.



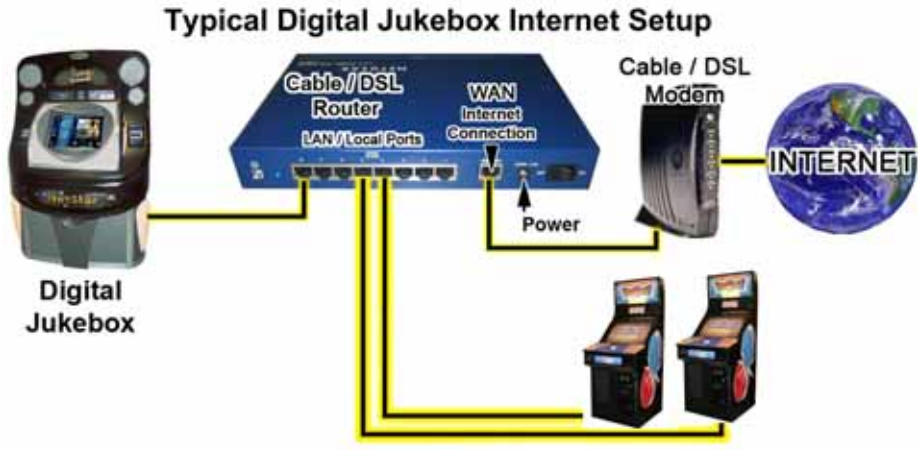
Using an Internet Jukebox Connection

If you have an Internet-connected jukebox (such as E-Cast), it is already set up with a broadband Internet connection and a Cable/DSL router. You can use the same router for Puck Off. The Puck Off cabinets will not interfere with the download of music. There are three typical scenarios for Internet-connected jukeboxes:

Scenario-1: The Digital Jukebox Company owns the Internet connection and Router and charges the Operator a flat fee for the use of this connection. You must contact the digital jukebox company and get their permission to use the router and Internet connection for Puck Off. In some cases the digital jukebox company will allow you to pay a fee to take over responsibility for the Internet connection and router, and then you can connect the Puck Off cabinets.

Scenario-2: The Operator owns the Internet connection, but a Digital Jukebox Company operates the Router for the Operator. You must contact the digital jukebox company and let them know that you want to add other games to the Internet connection. The digital jukebox company may charge a fee, but they will set up the router over the Internet so that all you have to do is connect the Puck Off cabinets to the router.

Scenario-3: The Operator owns both the Internet connection and the Router. The Operator can add the Puck Off cabinets to the existing Internet setup.



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Chapter 3 — Playing a Game

1. Coin up and press the **START/SELECT** button. The **Select Game** menu will appear. The various games are described in the table below.
2. Use the trackball to select your game and press the **START/SELECT** button.

Game Type	Description
Practice (With Remote Challenges)	Single-player practice game with trackball speed in RPM displayed. Use this feature to help you tune your playing skills. Players playing Practice games appear in the Remote Player Lobby where they can be challenged by remote players. (Players who don't want to be challenged can turn off *Allow Challengers* in the *Options Menu*.)
VS. Computer	Play against a character generated by the computer. Players playing VS. Computer games appear in the Remote Player Lobby where they can be challenged by remote players. (Players who don't want to be challenged can turn off *Allow Challengers* in the *Options Menu*.)
Two Players	Play against another person at the same cabinet.
VS. Remote Player	Play against another person at a remote location. This option is only available if another online player is accepting challenges.
Tournament	Play in a tournament set up by the location operator. This option is only available if the operator has set up a local tournament (see page 20).

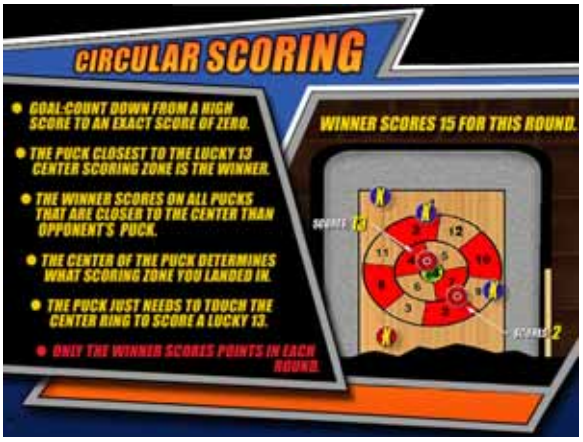
3. If you selected *VS. Computer*, the next screen will ask you to select the character to play against. Each character has a difficulty rating based on how hard it is to beat them.
4. If you selected *Tournament*, an agreement screen will appear. Press the **START/SELECT** button to confirm that you agree with the Tournament Rules. (The table will be pre-selected for the Tournament.)

5. The next screen will ask you to select a table. The various tables are described below.

   Hold down the **MUSIC** button for EXPERT Mode. This mode disables shot shaping.

Table	Description
Beginner	Scoring rules are the same as for the Pro table, but this table is designed to make it easier to score.
Pro	The player with the puck farthest from the playing end, and/or ahead of their opponent's puck is the winner. Also known as traditional shuffleboard.
Pyramid	Pyramid uses the same scoring methods as traditional shuffleboard. The only difference is the design of the scoring area.
Bumper	Players must bounce the weight (puck) off the bumper edge in order to score points. All pucks on the playfield score points in each round.
Lucky 13	Player with the puck closest to the lucky 13 center scoring zone is the winner per round. The goal is to count down from a high score to an exact score of zero.

6. After you select your table and press **START/SELECT**, a screen with rules for the Table will appear. When you finish reading the screen, press **START/SELECT** again to begin the game.


CIRCULAR SCORING
GOAL: COUNT DOWN FROM A HIGH SCORE TO AN EXACT SCORE OF ZERO.
THE PUCK CLOSEST TO THE LUCKY 13 CENTER SCORING ZONE IS THE WINNER.
THE WINNER SCORES ON ALL PUCKS THAT ARE CLOSER TO THE CENTER THAN OPPONENT'S PUCK.
THE CENTER OF THE PUCK DETERMINES WHAT SCORING ZONE YOU LANDED IN.
THE PUCK JUST NEEDS TO TOUCH THE CENTER RING TO SCORE A LUCKY 13.
ONLY THE WINNER SCORES POINTS IN EACH ROUND.
WINNER SCORES 15 FOR THIS ROUND.

7. If you selected VS. Remote Player from the Select Game screen, a list of available online players will appear after you select your table. Use the trackball to select a player to challenge, and press **START/SELECT**.

8. Once the game starts, press the **MENU** button for the **Options Menu** with the following choices:

Option	Description
Allow Challengers	Select **YES** (default) to allow remote players to challenge you (available in *Practice* or *VS. Computer* games).
Player Name	Lets players enter their names using an onscreen keyboard (see also step 9).
Puck Color	Lets players change the color and graphic on their pucks.
End Game	Ends the current game (a second screen will ask players to confirm).
Return to Game	Exits from the Options Menu.

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9. Once the game starts, players can use a magnetic stripe card (such as a credit card) to automatically load their name and custom puck design. (The credit card number is not read.)
   a. Slide the card through the card reader. The software will read your name from the card and open the Enter Player Name screen.
   b. Use the onscreen keyboard to edit your name to be the way you want it to appear on the screen. You will then be prompted to enter a PIN number (you can use the PIN later if you don't have your card with you).
   c. In the future, once a game starts, you can slide your card and the software will automatically display your name and custom puck. Your information is saved on the server, so it will be available on any online **Puck Off** cabinet.
10. As you play, watch for hints and tips that scroll along the bottom of the screen.
11. When playing a Remote Player, press the **Message** button to send messages to the other player.
12. Top players in **Practice** and **Tournament** games show up on the Leaderboards.

Hints: During play, press and hold the **START/SELECT** button to speed up gameplay by 3 Times. (This does not work in *VS. Remote Player* games.)

Shot Shaping: After throwing a puck, use the trackball to influence the direction the puck travels. This feature is not available for *VS. Remote Player* and *Tournament* games.

Chapter 6 — Operator Menu and Game Setup

This chapter describes how to use the Game Operator menu to set up the game, diagnose problems, and view gameplay and earnings statistics.

With the game running in Attract Mode, open the coin door and press the Operator **TEST** button on the Operator Button Panel to open the main **Operator Menu**.

To navigate the menus, use the trackball to highlight the desired menu item (an arrow will appear next to the highlighted item) and then press the **START/SELECT** button to adjust the settings or open a submenu, depending on the selection.

To exit from any Operator screen, press the **MENU** button (or highlight **EXIT** and press **START/SELECT**). If you continue to press the **MENU** button you will exit back to the game.

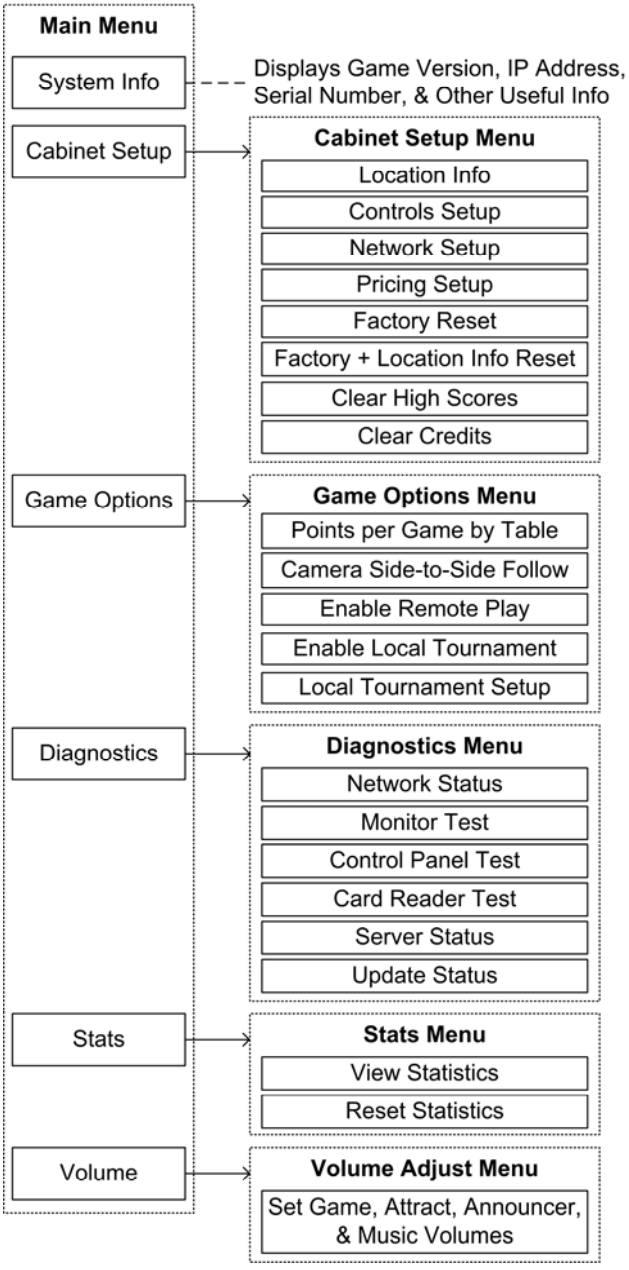

Figure 2. Operator Menu Flowchart

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Main Operator Menu

This menu appears first and gives you access to the submenus. It also displays GLOBAL VR contact information.

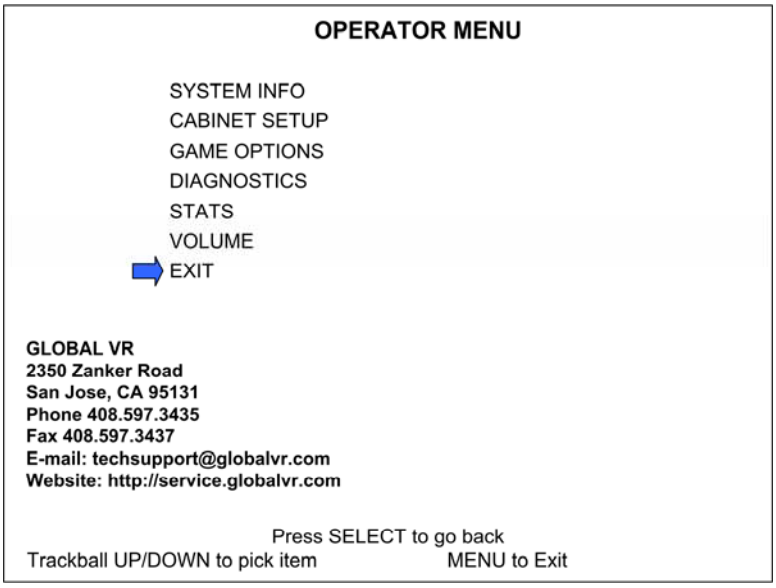

Figure 3. Main Operator Menu

Menu Item	Description
System Info	Opens the **System Info** screen, which displays the Game Software Version, Hard Drive Serial Number, and other information. (See page 13.)
Cabinet Setup	Opens the **Cabinet Setup** menu where you can set up your Location Info, Network, and Pricing, adjust the Trackball, or clear high scores and credits. (See page 14.)
Game Options	Opens the **Game Options Menu** where you can set up point goals needed to win games, enable or disable Remote Play and Local Tournaments, and set up a Local Tournament. (See page 19.)
Diagnostics	Opens the **Diagnostics Menu** where you can troubleshoot problems with cabinet hardware or the Internet Connection. (See page 21.)
Stats	Opens the **Stats Menu** where you can view or reset cabinet statistics. (See page 23.)
Volume	Opens the **Volume Adjust** menu where you can set game, attract, announcer, and music volumes separately. (See page 25.)
Exit	Exits to Attract Mode.

System Info Screen

This screen displays information about the Puck-Off System Computer. Press any button to exit.

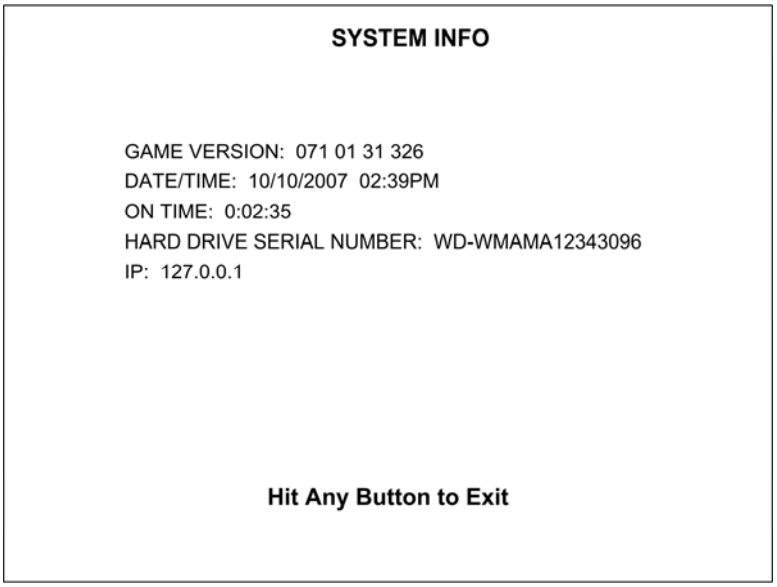

Figure 4. System Info Screen

Menu Item	Description
Game Version	Software Version Number. This number is useful to Tech Support for troubleshooting any issues that may occur.
Date/Time	Current Date and Time. This is set by the Operating System and is updated automatically for online cabinets. (Cabinets that are not online must use the default time from the computer manufacturer.)
On Time	Length of time since the cabinet was last turned on (hours:minutes:seconds).
Hard Drive Serial Number	Hard Drive Serial Number. (This is ***not*** the same as the cabinet serial number on the label applied to the back of the cabinet.) If you restore software on the cabinet, you will need to call Tech Support and tell them this number.
IP	IP Address used to access the Internet; configured from the Network Options menu. (See page 17.)

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Cabinet Setup Menu

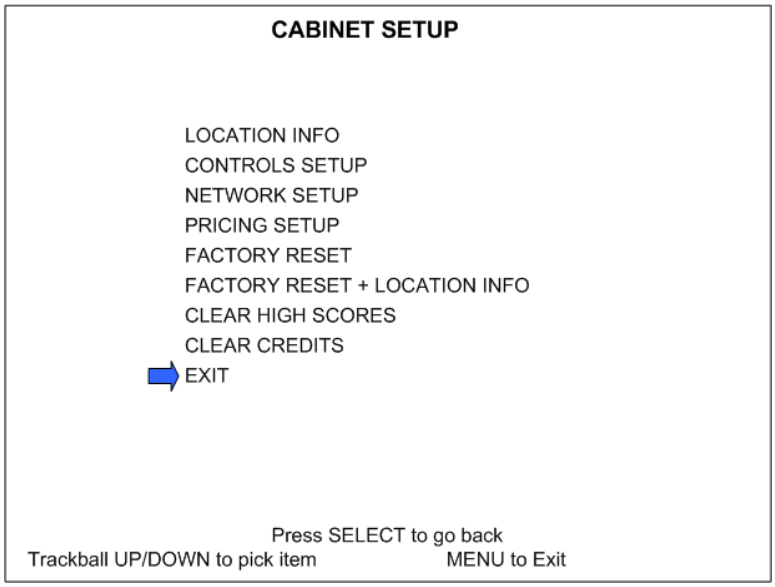

Figure 5. Cabinet Setup Menu

Menu Item	Description
Location Info	Opens the Location Information menu where you can set up information about your location. It is important to set up this info when your cabinet is connected to the Internet.
Controls Setup	Opens the Controls Options menu where you can adjust the Trackball Settings.
Network Setup	Opens the Network Options menu where you can define a static IP address for the cabinet or set up the network to use DHCP.
Pricing Setup	Opens the Credit Menu where you can define how much a coin drop is worth, and the cost to start and continue a game.
Factory Reset	Highlight and press **START/SELECT** to restore all cabinet settings to factory defaults. When the confirmation screen appears, hold **START/SELECT** until the countdown finishes. Does not affect Statistics or Location Info.
Factory Reset + Location Info	Highlight and press **START/SELECT** to restore all cabinet settings to factory defaults and clear all Location Info. When the confirmation screen appears, hold **START/SELECT** until the countdown finishes. Does not affect Statistics.
Clear High Scores	Highlight and press **START/SELECT** to clear all high scores. When the confirmation screen appears, hold **START/SELECT** until the countdown finishes. This does not affect Statistics.
Clear Credits	Highlight and press **START/SELECT** to clear all available credits. When the confirmation screen appears, hold **START/SELECT** until the countdown finishes. This does not affect Statistics.
Exit	Returns to the previous screen.

Location Information Screen

This screen lets you set up information about your cabinet and location to identify your location to remote players.

To input your information, select an item and then press **START/SELECT**. An onscreen keyboard will appear. Use the trackball to select each character, one by one, and then press **START/SELECT**. When you finish, select DONE on the keyboard (press the **MENU** button to automatically select DONE) and press **START/SELECT** or **MENU** to exit from the item.

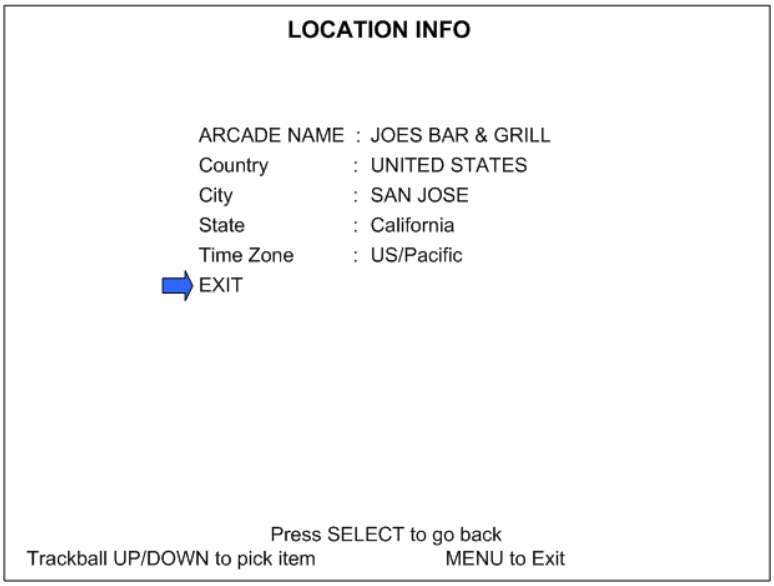

Figure 6. Location Information Screen

Menu Item	Description
Arcade Name	Input the name of your location.
Country	Input the country where your arcade is located.
City	Input your city.
State	Input your state.
Time Zone	Select the time zone of your location.
EXIT	Return to the previous screen.

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Controls Options Menu

This menu lets you adjust the trackball performance or compensate if it was installed backwards.

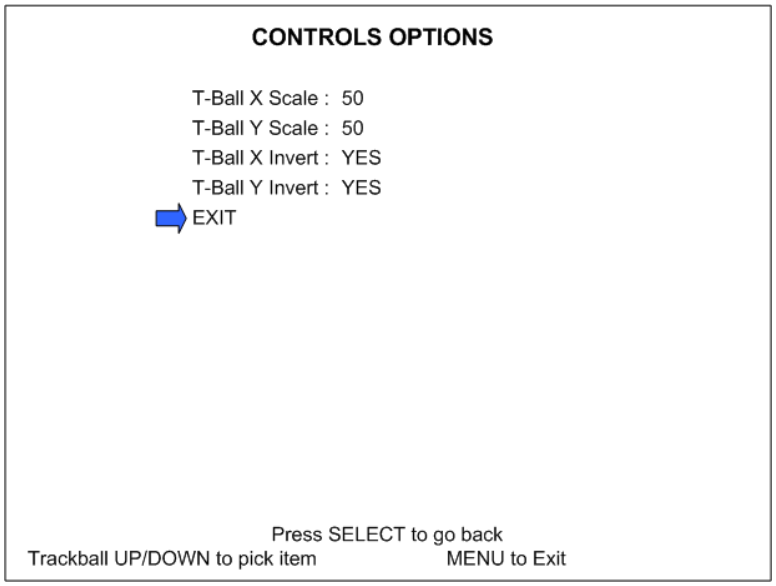
CONTROLS OPTIONS
T-Ball X Scale : 50
T-Ball Y Scale : 50
T-Ball X Invert : YES
T-Ball Y Invert : YES
EXIT
Press SELECT to go back
Trackball UP/DOWN to pick item
MENU to Exit

Figure 7. Controls Options Menu

Menu Item	Description
T-Ball X Scale	This setting adjusts how much the trackball affects the puck in the left and right directions. The lower the setting, the less the puck moves left and right in the game. The default setting of **50** is recommended. Play a game to see the effect of changes to this setting.
T-Ball Y Scale	This setting adjusts how much the trackball affects the puck in the forward and backward directions. The lower the setting, the less the puck moves forward and backward in the game. The default setting of **50** is recommended. Play a game to see the effect of changes to this setting.
T-Ball X Invert	This setting reverses the trackball's left and right movement. It is used to compensate if the trackball was installed backwards. (Be sure to invert Y as well.)
T-Ball Y Invert	This setting reverses the trackball's forward and backward movement. It is used to compensate if the trackball was installed backwards. (Be sure to invert X as well.)
Exit	Returns to the previous screen.

Network Options Menu

This screen lets you control the settings the cabinet uses to connect to the Internet.

To input your settings, use the trackball to select an item and then press **START/SELECT**.

Hold down the **START/SELECT** button while moving the trackball left or right to scroll through the numbers (0—255). Let go of the button when you reach the correct number, and then use the trackball to select the next number.

When you finish, press the **MENU** button to exit from the item. Use the trackball to select the next item.

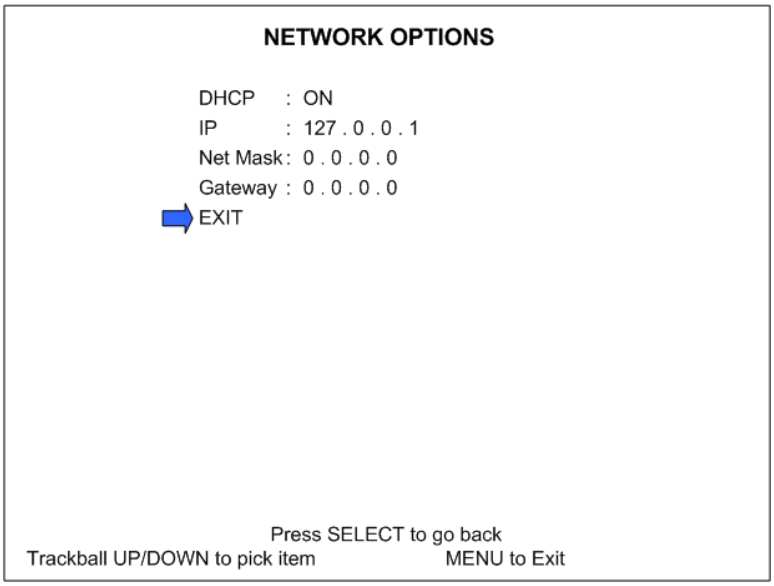
NETWORK OPTIONS
DHCP : ON
IP : 127 . 0 . 0 . 1
Net Mask: 0 . 0 . 0 . 0
Gateway : 0 . 0 . 0 . 0
EXIT
Press SELECT to go back
Trackball UP/DOWN to pick item
MENU to Exit

Figure 8. Network Options Screen

Menu Item	Description
DHCP	If ON, tells the computer to get an IP address from another device, such as a network router. (This is used more commonly than the static IP address.)
IP	Sets a Static Internet Protocol (IP) address used to identify the computer on the Internet, if your Internet service is set up this way. Your Internet Service Provider will tell you the IP Address to use. To use this setting, DHCP must be set to OFF.
Net Mask (Used with Static IP Only)	Sets the Subnet Mask used by the computer. This is only used if DHCP is set to OFF. Your Internet Service Provider will tell you the Subnet Mask to use.
Gateway (Used with Static IP Only)	Sets the Gateway address used by the computer. This is only used if DHCP is set to OFF. Your Internet Service Provider will tell you the Gateway address to use.
Exit	Returns to the previous screen.

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Credit Menu

This menu lets you set up pricing for the cabinet.

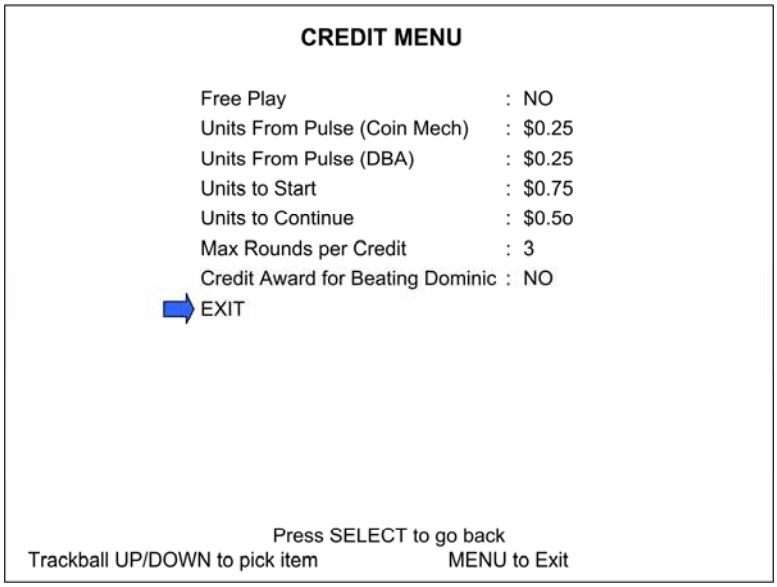
CREDIT MENU
Free Play : NO
Units From Pulse (Coin Mech) : $0.25
Units From Pulse (DBA) : $0.25
Units to Start : $0.75
Units to Continue : $0.5o
Max Rounds per Credit : 3
Credit Award for Beating Dominic : NO
EXIT
Press SELECT to go back
Trackball UP/DOWN to pick item
MENU to Exit

Figure 9. Credit Menu

Menu Item	Description
Free Play	Sets Free Play to YES (on) or NO (off).
Units From Pulse (Coin Mech)	Sets the money units per pulse from the Coin Mech.
Units from Pulse (DBA)	Sets the money units per pulse from the Dollar Bill Acceptor (DBA).
Units to Start	Sets the money units required to start a game.
Units to Continue	Sets the money units required to continue a game in progress.
Max Rounds per Credit	Sets the maximum number of rounds a player can get for one credit.
Credits Awarded for Beating Dominic	Sets the number of credits a player receives for beating Dominic, the master computer opponent in the game. Select **NO** if you do not want to award credits.
EXIT	Returns to the previous screen.

Game Options Menu

This menu lets you set up scoring goals and enable local tournaments.

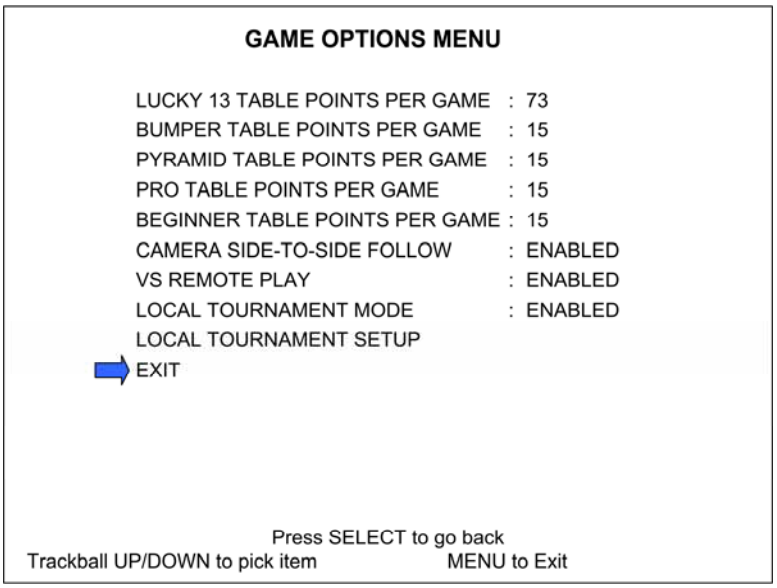
GAME OPTIONS MENU
LUCKY 13 TABLE POINTS PER GAME : 73
BUMPER TABLE POINTS PER GAME : 15
PYRAMID TABLE POINTS PER GAME : 15
PRO TABLE POINTS PER GAME : 15
BEGINNER TABLE POINTS PER GAME : 15
CAMERA SIDE-TO-SIDE FOLLOW : ENABLED
VS REMOTE PLAY : ENABLED
LOCAL TOURNAMENT MODE : ENABLED
LOCAL TOURNAMENT SETUP
EXIT
Press SELECT to go back
Trackball UP/DOWN to pick item
MENU to Exit

Figure 10. Game Options Menu

Menu Item	Description
Lucky 13 Table Points per Game	Sets the starting point value for the Lucky 13 Table. The points the player scores are subtracted from this value. The player must count down to a goal of zero to win on this table.
Bumper Table points per Game	Sets the point goal required to win on the Bumper Table.
Pyramid Table Points per Game	Sets the point goal required to win on the Pyramid Table.
Pro Table Points per Game	Sets the point goal required to win on the Pro Table.
Beginner Table Points per Game	Sets the point goal required to win on the Beginner Table.
Camera Side-to-Side Follow	If set to Enabled, the camera (onscreen view) will move left or right to follow the puck.
VS Remote Play	Allows the cabinet to participate in live Head-to-Head play from across the Internet.
Local Tournament Mode	If set to Enabled, this allows the cabinet to run Local Tournaments. Local Tournaments are played on a single cabinet only, and do not use any connectivity to other cabinets.
Local Tournament Setup	Opens the Local Tournament Setup menu where you can define your Local Tournament settings.
EXIT	Returns to the previous screen.

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Local Tournament Setup

This screen lets you set up local tournaments.

To change dates or other numeric fields, highlight an item and press **START/SELECT**. Hold down the **START/SELECT** button while moving the trackball left or right to scroll through the numbers. Release the button when you reach the correct number, and then use the trackball to select the next number.

To change text fields, highlight an item and press **START/SELECT**. An onscreen keyboard will appear. Use the trackball to select each character, one by one, and then press **START/SELECT**. When you finish, select DONE on the keyboard (press the **MENU** button to automatically select DONE) and press **START/SELECT** or **MENU** to exit from the item.

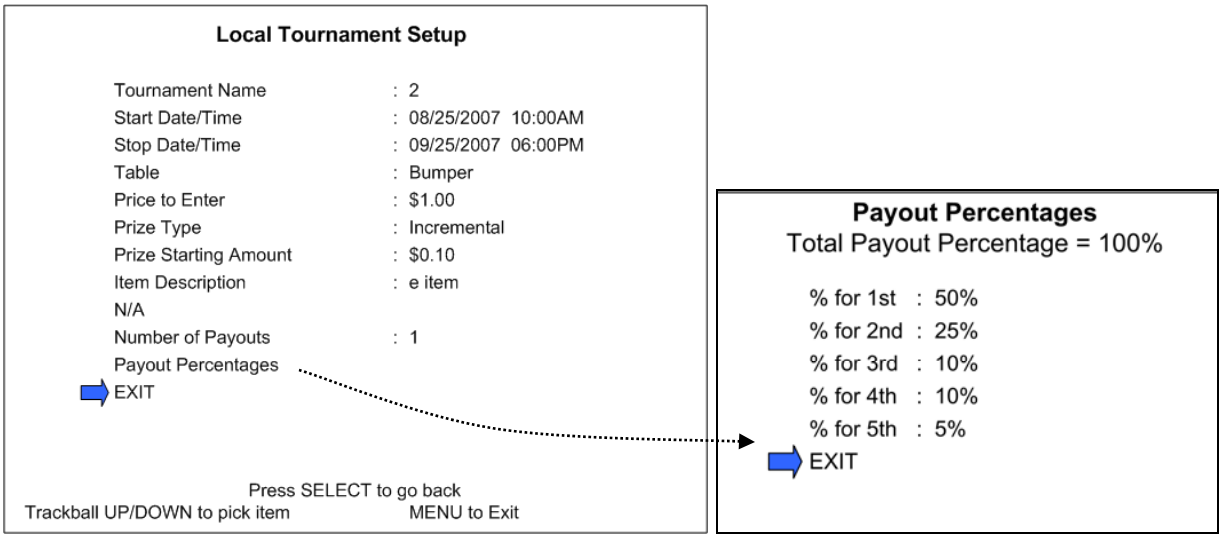

Figure 11. Local Tournament Setup Menu

Menu Item	Description
Tournament Name	Enter a name to identify your Local Tournament.
Start Date/Time	Set a start date and time.
Stop Date/Time	Set a stop date and time (players must start their game before this time).
Table	Select the game table that the players will compete on for this Tournament.
Price to Enter	Set a price to enter the Tournament.
Prize Type	Enter the type of prizes to be awarded (*Fixed*, *Incremental*, or *Item*).
Prize Starting Amount	Enter the starting amount for a cash prizes.
Item Description	Enter a non-cash prize, as applicable (e.g. *T-Shirt* or *TV*).
N/A	*(For future development.)*
Number of Payouts	Set the number of prizes to be awarded (1—5).
Payout Percentages	Opens screen that lets you set the payout percentages for each prize when awarding cash prizes. It also makes sure amounts equal 100%.
Exit	Return to the previous screen.

Diagnostics Menu

This menu gives you access to various submenus for troubleshooting issues with the network or cabinet hardware.

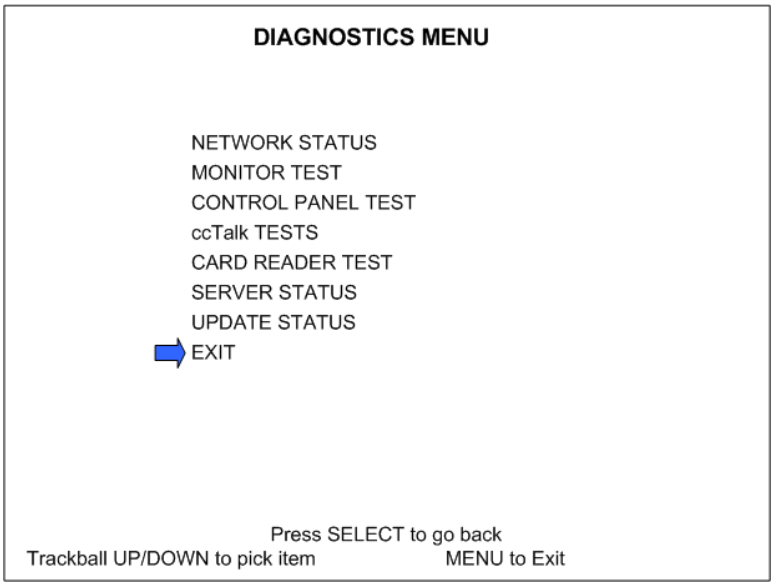

Figure 12. Diagnostics Menu

Menu Item	Description
Network Status	Opens the Network Status screen, which lets you see whether data is being sent and received successfully over the network (see next page).
Monitor Test	Opens the Monitor Test Menu, which lets you select from several monitor test screens. Use the test screens to help you adjust the monitor using the monitor remote control board (see next page).
Control Panel Test	Opens the Control Test screen, which lets you test control panel and operator buttons, coin mechs, and the trackball. When you press a button or activate a coin mech, the corresponding icon will highlight on the screen to verify the device is working. Crosshairs on the screen show you the range of motion for the trackball (see next page).
ccTalk Tests	*(Not Used.)*
Card Reader Test	Select this test and insert a Credit Card (or other accepted card). The name on the card will be displayed onscreen to verify the card reader is working.
Server Status	Opens the Server Status screen, which shows the status of communication with the three servers used for online features.
Update Status	Opens the Update Status screen which shows you the status of a software update being downloaded from the Internet, as applicable.
Exit	Returns to the previous screen.

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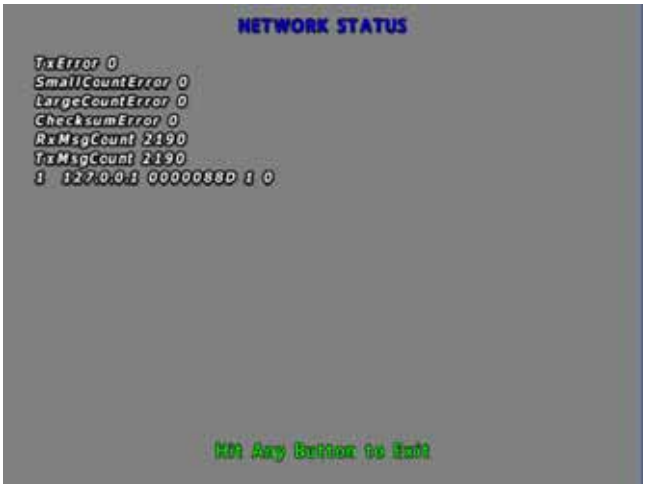

Figure 13. Network Status Screen

This screen displays information about network communication. This information can be useful for troubleshooting network issues.

Press any button to exit from this screen.

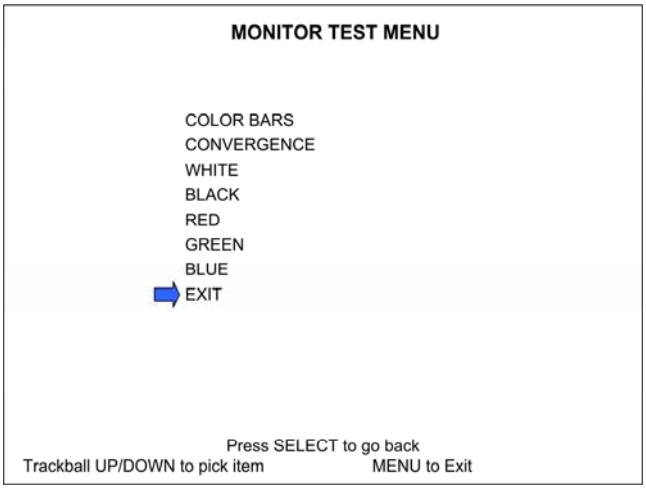

Figure 14. Monitor Test Menu

This menu opens various test screens designed to help you test and adjust the monitor colors and geometry. Display these screens to help you adjust the monitor using the monitor remote control board.

Press the **MENU** button to exit from the test screens.

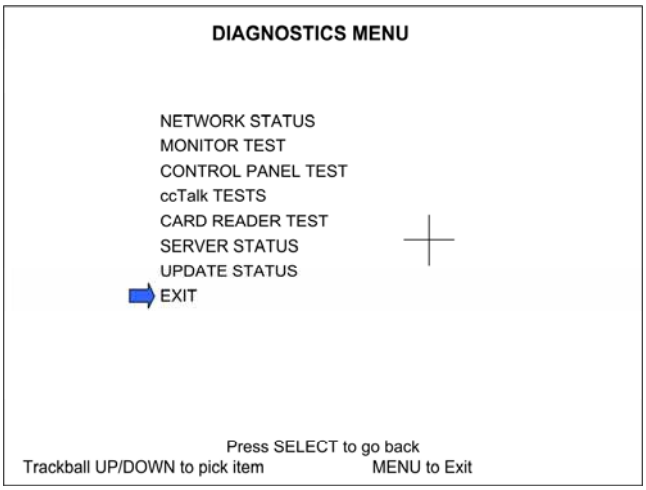

Figure 15. Control Test Screen

Each time you press a button or activate a coin mech, the corresponding item will change from red to green onscreen.

The onscreen crosshairs represent the trackball position, allowing you to test the range of motion of the trackball.

Hold the **MENU** button to exit from this screen.

Note: The button labeled *DOOR* is not used.

Server Status Screen

This screen displays the status of the cabinet's connection with the three Puck Off servers. It also displays the IP Address and Gateway set for the system. Items will display in red if the connection is not working.

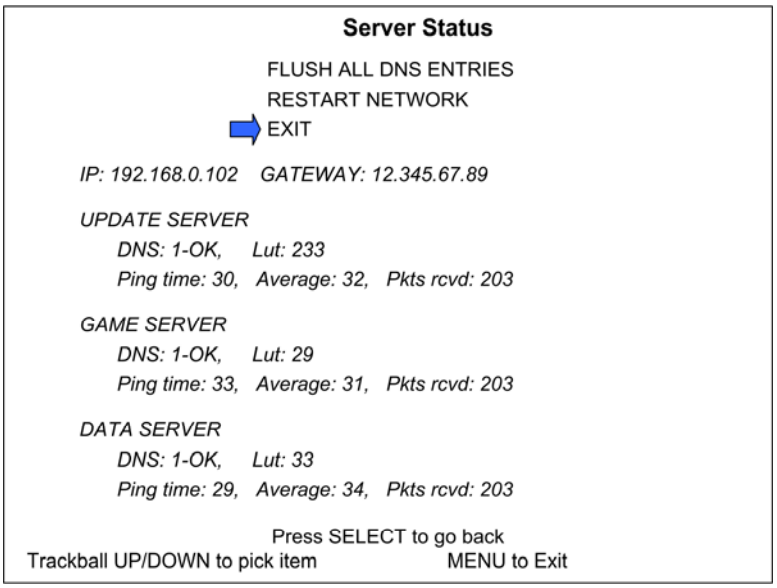
Server Status
FLUSH ALL DNS ENTRIES
RESTART NETWORK
EXIT
IP: 192.168.0.102 GATEWAY: 12.345.67.89
UPDATE SERVER
DNS: 1-OK, Lut: 233
Ping time: 30, Average: 32, Pkts rcvd: 203
GAME SERVER
DNS: 1-OK, Lut: 29
Ping time: 33, Average: 31, Pkts rcvd: 203
DATA SERVER
DNS: 1-OK, Lut: 33
Ping time: 29, Average: 34, Pkts rcvd: 203
Press SELECT to go back
Trackball UP/DOWN to pick item
MENU to Exit

Figure 16. Server Status Screen

Menu Item	Description
Flush All DNS Entries	Highlight and press **START/SELECT** to Flush all DNS Entries. Try this if you move the cabinet to a new location and ping times become slow.
Restart Network	Highlight and press **START/SELECT** to close all connections and restart the network. Try this if the connection is not working.
Exit	Returns to the Diagnostics Menu.
UPDATE SERVER	This server provides software updates.
GAME SERVER	This server provides linking with players at remote locations.
DATA SERVER	This server provides the player's name and puck design from the name on the player's credit card or driver's license, or the player's PIN. It may also be used for Internet Reporting in the future.
The items below are displayed for each of the three servers:	
DNS	Displays DNS status. This should say *1-OK* if everything is working.
Lut	Displays data Look Up Table information.
Ping time	Displays the current communication time, in milliseconds.
Average	Displays the average communication time, in milliseconds.
Pkts rcvd	Displays the number of data packets received from the server.

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Statistics Menu

When you select Stats from the main Operator Menu, the **Stats Menu** will appear.

When you select **Reset Stats** from the Stats Menu, the Reset Accounting Statistics screen will appear. Hold the **START/SELECT** button until the countdown finishes to reset statistics.

When you select **View Stats** from the Stats Menu, the Statistics Menu appears. This menu displays statistics about game play and earnings, as described below.

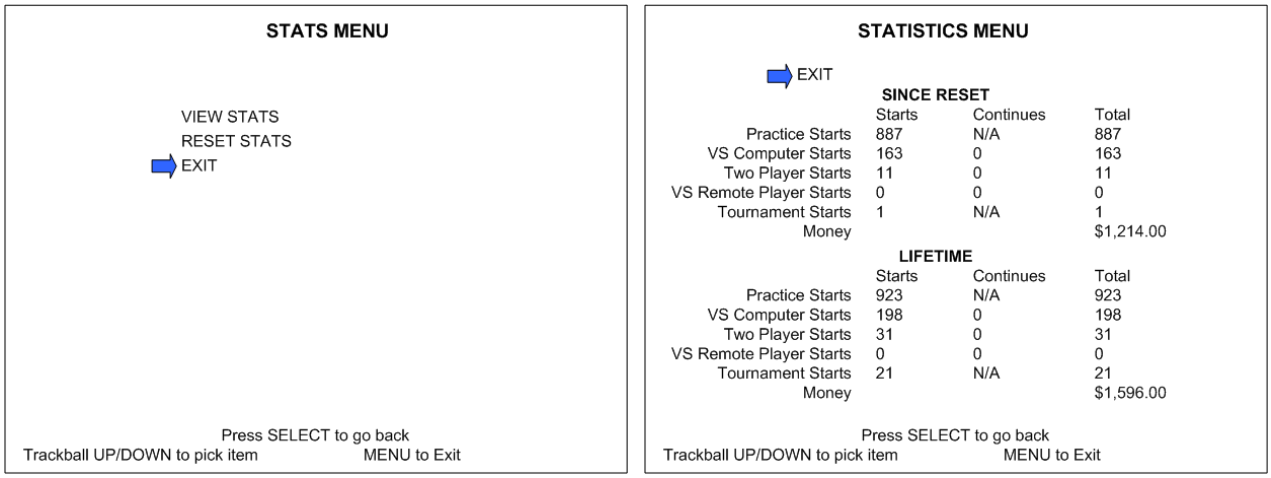

Figure 17. Statistics Menu

The Statistics Menu is divided into two sections. *Since Reset* displays statistics since the last time Reset Stats was selected. Lifetime displays statistics since the software was installed. Each section contains the following items:

Menu Item	Description
Practice Starts	Displays the number of practice games started.
VS Computer Starts	Displays the number of games against the computer started.
Two Player Starts	Displays the number of two-player games started.
VS Remote Player Starts	Displays the number of games started against a remote opponent.
Tournament Starts	Displays the number of Local Tournament games started.
Money	Displays total earnings for the cabinet.

Volume Adjust Menu

This screen lets you adjust the cabinet volume. Use the trackball to select the item to adjust, and then press and hold the **START/SELECT** button while you move the trackball right or left to adjust a setting.

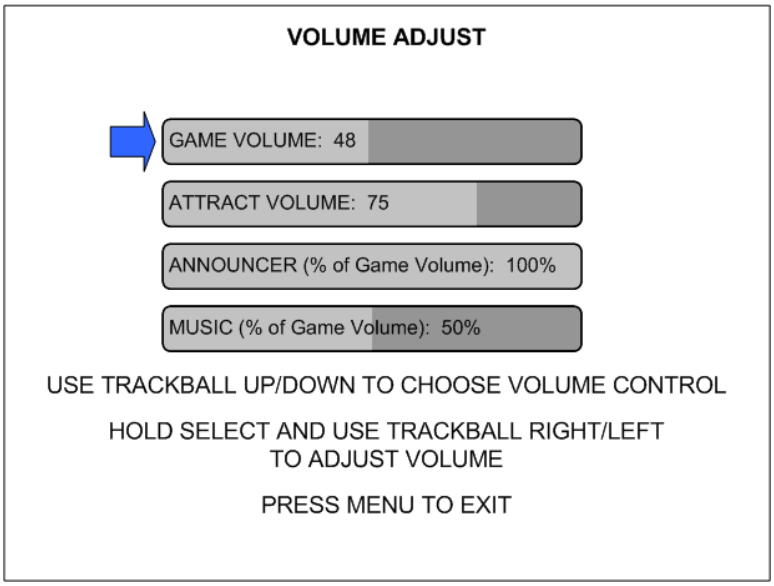
VOLUME ADJUST
GAME VOLUME: 48
ATTRACT VOLUME: 75
ANNOUNCER (% of Game Volume): 100%
MUSIC (% of Game Volume): 50%
USE TRACKBALL UP/DOWN TO CHOOSE VOLUME CONTROL
HOLD SELECT AND USE TRACKBALL RIGHT/LEFT
TO ADJUST VOLUME
PRESS MENU TO EXIT

Figure 18. Volume Adjust Menu

Menu Item	Description
Game Volume	Sets Game Volume from 1-100.
Attract Volume	Sets Attract Volume from 1-100.
Announcer	Sets the Announcer Volume as a percentage of game volume.
Music	Sets the Music Volume as a percentage of game volume.

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Chapter 7 — Software Restoration

IMPORTANT: A Broadband Internet Connection is REQUIRED to activate Restored Software.

The cabinet must be connected to a Broadband Internet Connection (DSL or Cable Modem), and you will have to contact GLOBAL VR Technical Support to register and activate your game. The **START** button will not work until the game is activated through the Internet.

Important: Software Restoration will only work on a Hard Drive that has been authorized on the Puck Off server. If your Hard Drive should fail, you must obtain a new drive from GLOBAL VR.

When you use the System & Game Install Disk, you will erase all game settings, statistics, and collections data stored in the game software. It is advisable to contact Technical Support before using the Disk to resolve a problem.

Perform the steps that follow if you need to restore software on your cabinet. The operating system and game software are provided on a single DVD labeled *System & Game Install Disk*. **Total installation time is about 7 minutes.**

1. With the game powered on, insert the **Puck Off System & Game Install Disk** in the computer DVD drive.
2. Power the game OFF, wait 5 seconds, and then power it back ON.
3. The computer will boot from the DVD and begin to install the Linux Operating System and Puck Off game software.
4. When the installation is complete, the drive will eject the DVD and a prompt on the monitor will say software installation is complete. Remove the DVD.
5. Make sure the cabinet is connected to an active broadband Internet connection, and then power cycle the cabinet.
6. Once the cabinet reboots, verify it is properly connected to the Internet by selecting **DIAGNOSTICS→SERVER STATUS** from the Operator Menu. Green text on this screen means the cabinet is connected and communicating with the Puck Off servers.
7. Open the **SYSTEM INFO** screen in the Operator Menu and write down the **Hard Drive Serial Number**. It will look something like this: WD-WMAMAA552778. You will need to tell this number to Tech Support.
8. Call GLOBAL VR Tech Support at 408.597.3435. Tech Support will complete the registration of the game and activate your game through the Internet. They will need your Hard Drive Serial Number to complete the process.

Chapter 8 — Service and Repair

CAUTION: GLOBAL VR assumes no liability for any damage or injuries incurred while servicing the cabinet. Only qualified service personnel should perform service and installation of cabinet hardware.

To prevent electrostatic discharge (ESD) damage, handle PCBs by the edges only and use a grounding wrist strap or similar precaution.

Please read the service instructions before working on the cabinet.

Always turn the cabinet OFF and disconnect the AC power cord before performing any repair work.

Because Puck Off is sold as a conversion kit, this manual contains service instructions only for components included in the conversion kit.

Using a Computer Keyboard

There may be times it is useful to connect a keyboard to the computer for troubleshooting purposes. You can use either a USB or PS-2 Keyboard, but you must reboot the computer after connecting a PS-2 keyboard.

Below is a list of the keyboard commands that work with **Puck Off**:

Key	Function
T	Opens the Operator Menu
↓ ↑	Moves Up or Down through menus
Enter	Control panel **Start/Select** button
M	Control panel **Menu** button
Q	Control panel **Camera** button
R	Control panel **Music** button
C	Add Coins
Esc	Restart Software

Trackball Service

This section describes the steps for disassembling the trackball to clean or replace parts.

CAUTION: To prevent electrostatic discharge (ESD) damage, handle PCBs by the edges only and use a grounding wrist strap or similar precaution.

1. Disconnect power and open the control panel.
2. Disconnect the trackball harness.
3. Remove the four nuts that secure the lower mounting bracket under the trackball. Note the locations of the two ground wires for reassembly.
4. Remove the lower mounting bracket and the trackball assembly.

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5. To replace the red sensor PCBs, unscrew the six (6) Phillips screws about halfway and then separate the plastic trackball housing enough to remove the PCBs. Note the orientation of each PCB relative to the sensor wheel. Follow electrostatic discharge (ESD) precautions and handle the PCBs by the edges only.
6. To completely disassemble the trackball, remove the six (6) Phillips screws from the plastic trackball housing, making note of the locations of the two ground wires. Be careful not to damage the copper foil at the ground wire connection points.
7. Carefully separate the plastic housing and remove the trackball. Wash the trackball with mild soap and water, and dry.
8. Lift the metal shafts and bearings out of the housing. Clean the shafts and bearings with a soft cloth. If the bearings have been sticking, clean them with a light oil such as WD-40®, and then wipe them thoroughly to remove all excess oil. If any oil gets on the trackball, it will trap dust and grime, interfering with trackball performance.
9. Re-assemble the trackball in the reverse order of disassembly. Be careful to align the red sensor PCBs with the grooves in the top and bottom pieces of the plastic housing. (**Hint:** Tighten the screws about halfway and then re-position the PCBs.) Be sure to connect all of the ground wires removed previously. (The trackball housing is grounded to the mounting plate, which is grounded to the lug inside the coin door.)
10. Play a game to verify proper trackball operation.

Ref #	Qty	Part #	Description
1	1	95-0560-00	3" TRACKBALL BOTTOM BRK
2	1	95-1604-00	3" TRACKBALL TOP BRK (1/8" SHORT)
3	1	55-0200-XX	3" TRACKBALL BALL
4	2	95-0576-00	3" TRACKBALL ROLLER SHAFT
5	1	95-0575-00	3" TRACKBALL IDLER SHAFT
6	2	95-1422-00	PLASTIC STAR WHEEL
7	2	A052-1011-00	NEW STYLE PCB ASSY FOR T-BALL, RED
8	6	90-1005-00	SCREW, #8 X 1/2 PH. PN. HD. TYPE B
9	6	95-0570-00	BEARING FOR TRACKBALL OILED
10	4	95-0555- 140	TAPE, COPPER SMOOTH 1/2 WIDE
11	1	95-0577-00	GROUND WIRE HAPP TRACKBALL
12	1	95-0303-00	HARNESS T/BALL STANDARD TRACKBALL
13	1	90-1013-00	TIE WRAP 4" LENGTH, SOLD EA.
14	1	95-1828-00	TRACKBALL MOUNTING SHIM FOR 3" TRACKBALL
15	2	43-2253-00	SCREW 4-40 X 3/8 PHIL TRUSS HEAD MS W/LIGHT PATCH ZINC

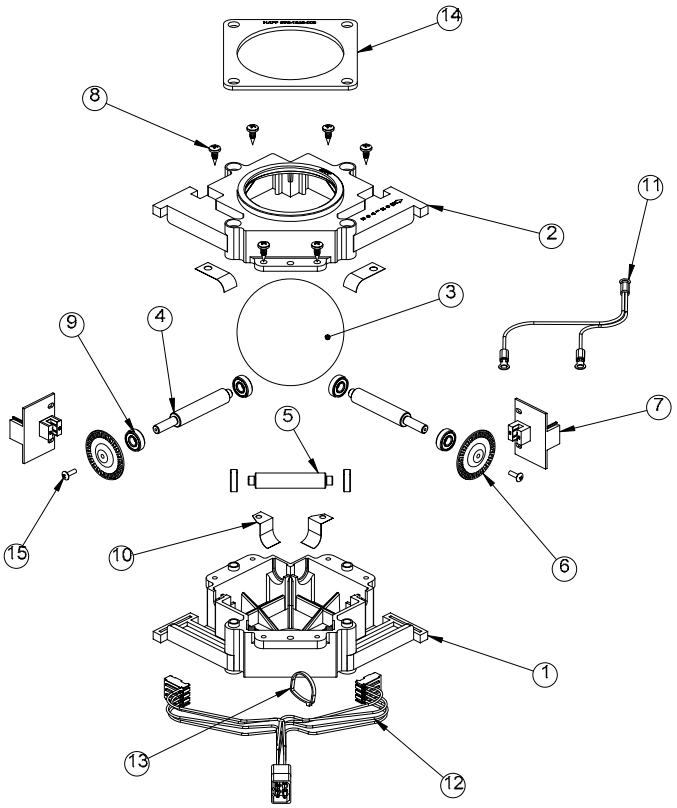

Figure 19. Trackball Exploded-View

Control Panel Button Service

The control panel buttons activate micro switches, as shown below. Perform the following steps to replace the micro switches or the buttons:

1. Gently press the plastic micro switch to the side to release it from the button housing.
2. Disconnect the two wires from the micro switch and connect them to the same terminals on the replacement micro switch.
3. To remove the button, unscrew the retaining ring.
4. Reverse these steps to install the replacement button and micro switch. Connect the ground wire to the COM connector on the bottom of the switch housing, and the signal wire to the NO connector, as shown in the figure below:

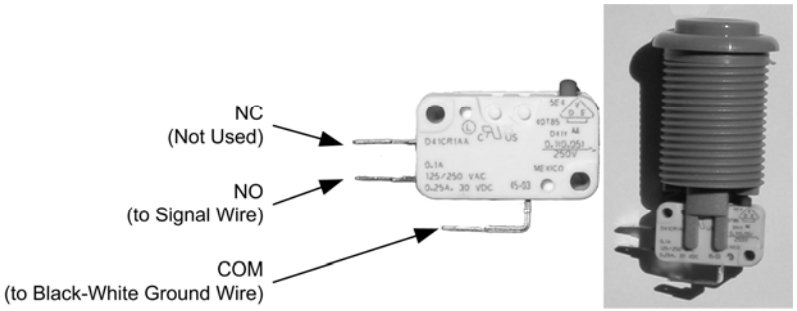

Figure 20. Player Button and Micro Switch

The GFX I/O PCB

The GFX I/O PCB routes all communication between the system computer and hardware devices.

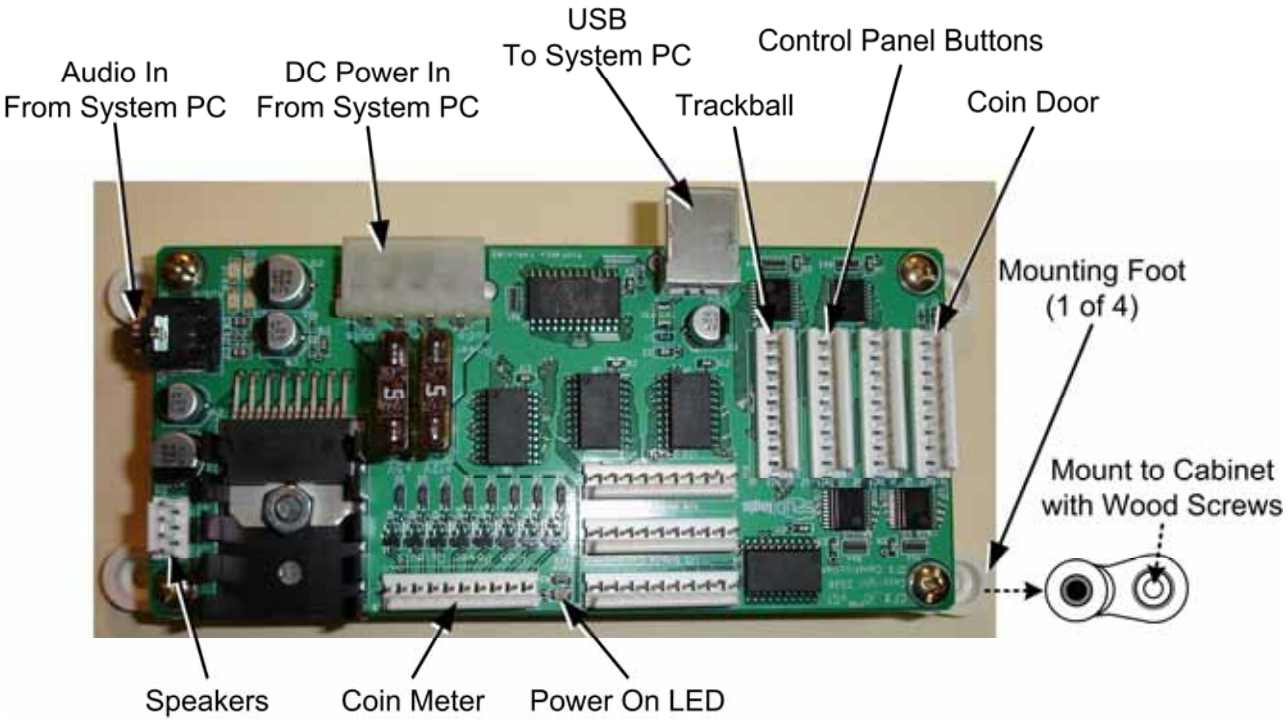

Figure 21. GFX I/O PCB Connections

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GFX I/O PCB Replacement

Perform the following steps to replace the GFX I/O PCB:

CAUTION: To prevent electrostatic discharge (ESD) damage, handle PCBs by the edges only and use a grounding wrist strap or similar precaution.

1. Disconnect the cabinet AC Power Cord.
2. Make sure that all wire harnesses are labeled for ease of reconnection, and then disconnect them from the PCB.
3. Remove the four screws that secure the PCB to the mounting feet.
4. Reverse these steps to install the new PCB.
5. Use the Operator Menu **DIAGNOSTICS** screens to verify all cabinet hardware is functioning properly.

Computer Replacement

CAUTION: The computer is serviced as one unit. YOU WILL VOID YOUR WARRANTY if you open the computer without direct authorization from the GLOBAL VR Technical Support staff.

Perform the following steps to remove the computer from the cabinet:

1. Disconnect all of the cables from the computer.
2. Unbuckle the strap that secures the computer in the cabinet and carefully remove the computer.
3. Reverse these steps to replace the computer. Make sure that the computer air vents are not blocked. There is an air vent under the bottom front panel of the computer that is easily blocked by padding or debris.
4. When shipping the computer, always use plenty of padding and protection. GLOBAL VR recommends shipping the computer in a box with **three inches of foam padding on all sides**.

CAUTION: Shipping the computer without enough padding can VOID THE WARRANTY if the computer is visibly damaged from shipping.

Card Reader Replacement

1. Disconnect the USB Cable from the card reader.
2. Remove the four (4) Kep nuts and carriage bolts that secure the card reader to the cabinet.
3. Remove the two small machine screws that secure the card reader to the mounting plate.
4. Reverse these steps to install the new card reader.
5. Test the card reader from **DIAGNOSTICS→CARD READER TEST** to ensure proper operation.

Setting the Computer BIOS (CMOS)

This procedure applies to the Gigabyte **GA-G31MX-S2** Motherboard. The screens for the GA-945GCMX-S2 Motherboard look a little bit different, but the procedure and settings are the same.

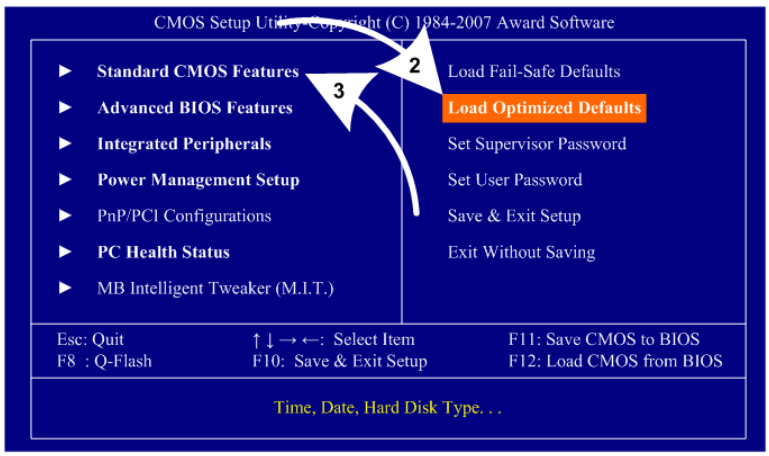
If your system has a different motherboard, check http://service.globalvr.com for updated information.

If you are comfortable using the CMOS Setup Utility, press the **DEL** key during boot to run the Utility, select **Load Optimized Defaults** from the Main Menu, and then change the settings shown in the table below. For more help, refer to the detailed instructions that follow.

Menu	Item	Setting
Standard CMOS Features	Drive A	None
	Halt On	No Errors
Advanced BIOS Features	First Boot Device	CDROM
	Second Boot Device	Hard Disk
	Third Boot Device	Disabled
Integrated Peripherals	USB Keyboard Support	Enabled
	USB Mouse Support	Enabled
Power Management Setup	AC Back Function	Full On
PC Health Status	CPU Smart FAN Control	Disabled

Important: Your screens may not look exactly like the screens shown in this document, and some settings shown on the screens pictures may be different from your system.
Do not change any settings that are not specifically described in this document.

1. Press the **DEL** key during boot. The CMOS Setup Utility Main Menu will appear:
2. Use the Arrow keys (↑↓→←) to select **Load Optimized Defaults**, and press **Enter**.
   Press **Y** and **Enter** when prompted to confirm the change.
3. Use the Arrow keys to highlight **Standard CMOS Features**, and then press **Enter**.



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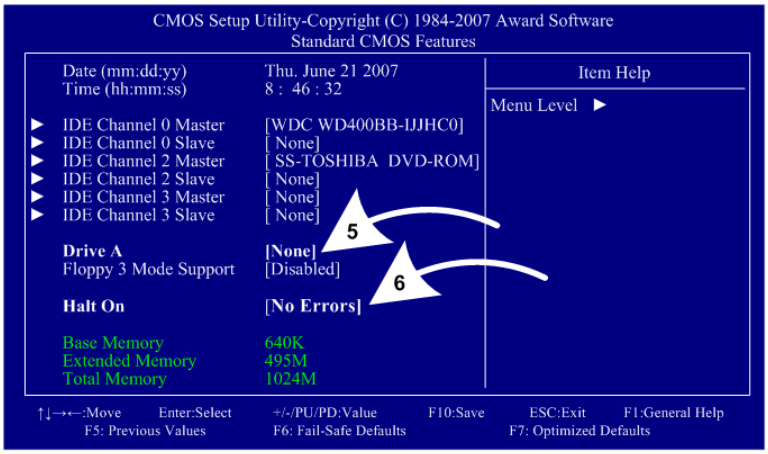
4. A screen similar to the following will appear:

5. Use the Arrow keys to highlight the setting for **Drive A** and press **Enter**. Use the **Page Up** and **Page Down** keys to change the setting to **None**.

6. Change the setting for **Halt On** to **No Errors** the same way.

   Press **ESC** to go back to the Main Menu.

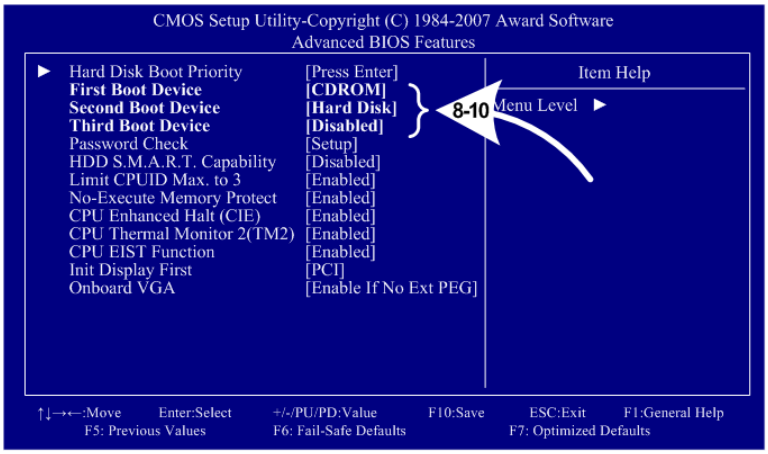

CMOS Setup Utility-Copyright (C) 1984-2007 Award Software
Standard CMOS Features
Date (mm:dd:yy) Thu. June 21 2007
Time (hh:mm:ss) 8 : 46 : 32
IDE Channel 0 Master [WDC WD400BB-IJJHC0]
IDE Channel 0 Slave [None]
IDE Channel 2 Master [SS-TOSHIBA DVD-ROM]
IDE Channel 2 Slave [None]
IDE Channel 3 Master [None]
IDE Channel 3 Slave [None]
Drive A [None]
Floppy 3 Mode Support [Disabled]
Halt On [No Errors]
Base Memory 640K
Extended Memory 495M
Total Memory 1024M
Item Help
Menu Level ►
5
6
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

7. Now use the Arrow keys to highlight **Advanced BIOS Features** and press **Enter**. A screen similar to the following will appear:

8. Use the Arrow keys to highlight the setting for **First Boot Device** and press **Enter**. Use the **Page Up** and **Page Down** keys to change the setting to **DVDROM**.

9. Change the setting for **Second Boot Device** to **Hard Disk** the same way.

10. Change the setting for **Third Boot Device** to **Disabled** the same way.

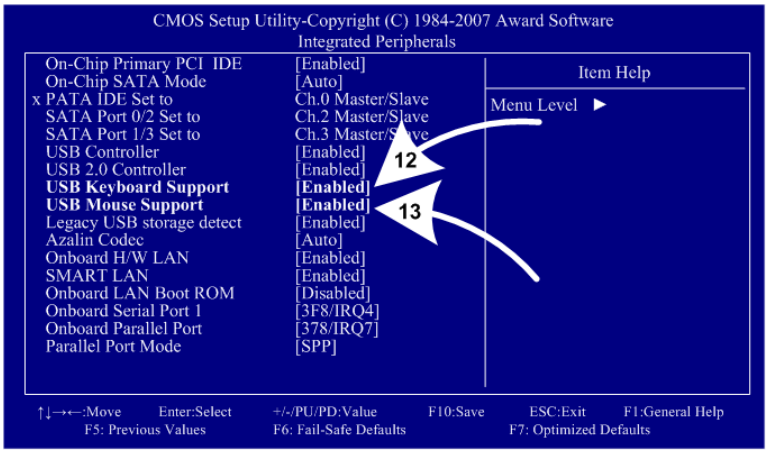

CMOS Setup Utility-Copyright (C) 1984-2007 Award Software
Advanced BIOS Features
Hard Disk Boot Priority [Press Enter]
First Boot Device [CDROM]
Second Boot Device [Hard Disk]
Third Boot Device [Disabled]
Password Check [Setup]
HDD S.M.A.R.T. Capability [Disabled]
Limit CPUID Max. to 3 [Enabled]
No-Execute Memory Protect [Enabled]
CPU Enhanced Halt (CIE) [Enabled]
CPU Thermal Monitor 2(TM2) [Enabled]
CPU EIST Function [Enabled]
Init Display First [PCI]
Onboard VGA [Enable If No Ext PEG]
Item Help
Menu Level ►
8-10
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

11. Now use the Arrow keys to highlight **Integrated Peripherals** and press **Enter**.

    A screen similar to the following will appear:

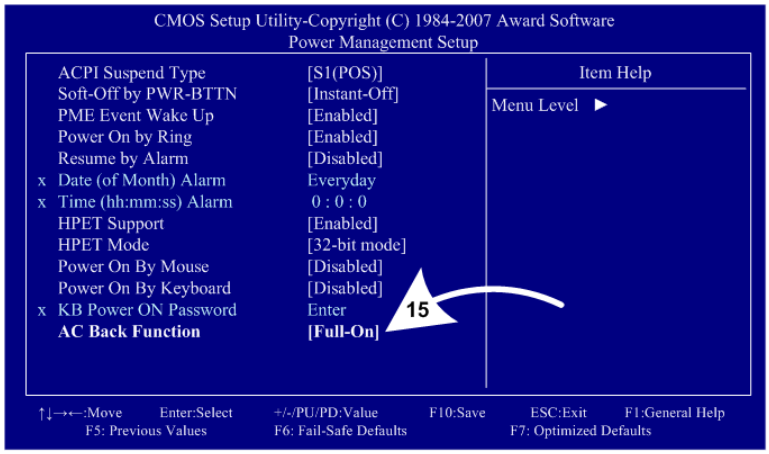
12. Use the Arrow keys to highlight the setting for **USB Keyboard Support** and press **Enter**.
    Use the **Page Up** and **Page Down** keys to change the setting to **Enabled**.

13. Use the Arrow keys to highlight the setting for **USB Mouse Support** and press **Enter**.
    Use the **Page Up** and **Page Down** keys to change the setting to **Enabled**.


CMOS Setup Utility-Copyright (C) 1984-2007 Award Software
Integrated Peripherals
On-Chip Primary PCI IDE [Enabled]
On-Chip SATA Mode [Auto]
x PATA IDE Set to Ch.0 Master/Slave
SATA Port 0/2 Set to Ch.2 Master/Slave
SATA Port 1/3 Set to Ch.3 Master/Slave
USB Controller [Enabled]
USB 2.0 Controller [Enabled]
USB Keyboard Support [Enabled]
USB Mouse Support [Enabled]
Legacy USB storage detect [Enabled]
Azalin Codec [Auto]
Onboard H/W LAN [Enabled]
SMART LAN [Enabled]
Onboard LAN Boot ROM [Disabled]
Onboard Serial Port 1 [3F8/IRQ4]
Onboard Parallel Port [378/IRQ7]
Parallel Port Mode [SPP]
Item Help
Menu Level ►
12
13
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

14. Now use the Arrow keys to highlight **Power Management Setup** and press **Enter**.

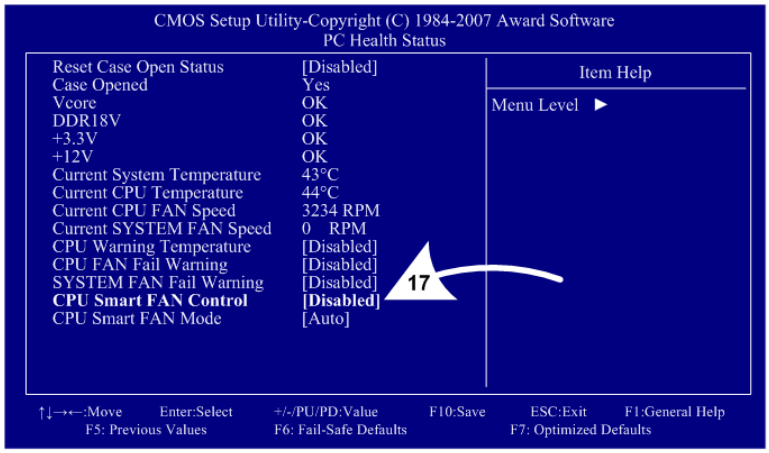
A screen similar to the following will appear:


CMOS Setup Utility-Copyright (C) 1984-2007 Award Software
Power Management Setup
ACPI Suspend Type [S1(POS)]
Soft-Off by PWR-BTTN [Instant-Off]
PME Event Wake Up [Enabled]
Power On by Ring [Enabled]
Resume by Alarm [Disabled]
x Date (of Month) Alarm Everyday
x Time (hh:mm:ss) Alarm 0 : 0 : 0
HPET Support [Enabled]
HPET Mode [32-bit mode]
Power On By Mouse [Disabled]
Power On By Keyboard [Disabled]
x KB Power ON Password Enter
AC Back Function [Full-On]
Item Help
Menu Level ►
15
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

15. Use the Arrow keys to highlight the setting for **AC Back Function** and press **Enter**.
    Use the **Page Up** and **Page Down** keys to change the setting to **Full-On**.

16. Now use the Arrow keys to highlight **PC Health Status** and press **Enter**.

A screen similar to the following will appear:


CMOS Setup Utility-Copyright (C) 1984-2007 Award Software
PC Health Status
Reset Case Open Status [Disabled]
Case Opened Yes
Vcore OK
DDR18V OK
+3.3V OK
+12V OK
Current System Temperature 43°C
Current CPU Temperature 44°C
Current CPU FAN Speed 3234 RPM
Current SYSTEM FAN Speed 0 RPM
CPU Warning Temperature [Disabled]
CPU FAN Fail Warning [Disabled]
SYSTEM FAN Fail Warning [Disabled]
CPU Smart FAN Control [Disabled]
CPU Smart FAN Mode [Auto]
Item Help
Menu Level ►
17
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

17. Use the Arrow keys to highlight the setting for **CPU Smart FAN Control** and press **Enter**.
    Use the **Page Up** and **Page Down** keys to change the setting to **Disabled**.

18. Now that all settings are correct, press F10. The following prompt will appear:

Save to CMOS and EXIT (Y/N) Y

19. Make sure "Y" shows at the end of the prompt (use the arrow keys to select, if necessary), and press **Enter** to save the settings and exit.

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Chapter 9 — Troubleshooting

Video Troubleshooting

Problem	Possible Cause	Possible Solution
No Picture on Monitor (Audio is Working)	Power Problem	Verify the AC power connection to the monitor. You can verify the monitor has power by looking for a small glow in the Neck of the CRT.
	Loose or Faulty Video Cable	Verify the cable is firmly connected from the computer Video port to the monitor. Check the video cable and make sure it is not pinched or frayed. Replace with a known good cable.
	Loose or Faulty Video Card	When the computer boots up, it performs a PC self-diagnostic test. If you hear 3 beeps from the computer, this indicates a problem with the video card. If the video card is faulty, contact Technical Support. If instructed by Technical Support, open the computer and check the following: • Make sure the video card is seated properly in the motherboard. Reseat the video card. • Check the power connector to the video card inside the computer. Make sure it is connected properly and is not connected backwards. Power on the computer and make sure the fan on the video card is spinning fast.
	Faulty Monitor Chassis PCB	Verify that the fuses on the chassis PCB are good. Replace chassis or monitor if required.
No Video and No Audio (Lights are Working)	No Power to Computer	Verify the computer is ON by the LED on the front of the computer. Verify the line voltage switch on the back of the computer is set to the local voltage (115V in the US and Canada). Make sure the AC power cord is firmly connected to the computer and the power strip, and the power strip LED is on. Turn off the power strip, wait 20 seconds, and then turn it back on to reboot the computer. If the computer does not power on, make sure the On/Off switch on the back of the computer is in the On (I) position and *AC Back Function* in the BIOS is set to *Full On* (see page 31).
	Faulty Hard Drive	If the computer is powered on, you may have a faulty hard drive or corrupted software on the hard drive. See page 26 for the Software Restoration procedure to see if this solves the problem. Contact Tech Support for additional assistance.
Picture is Dim or Faded	Picture needs Adjustment	Select **DIAGNOSTICS→MONITOR TEST** for test screens to help you to adjust the picture with the monitor remote control board.
Colors are poor	Colors need Adjustment	Select **DIAGNOSTICS→MONITOR TEST** for test screens to help you to adjust the color with the monitor remote control board.
Picture is Misaligned	Picture Geometry needs Adjustment	Select **DIAGNOSTICS→MONITOR TEST** for test screens to help you to adjust the geometry with the monitor remote control board.

Problem	Possible Cause	Possible Solution
Colors are Distorted	Monitor needs Degaussing	Press the degausser button on the monitor remote control board, or use a degaussing coil on the monitor.
Picture is Scrambled	Game is Set Up for Wrong Resolution	Insert the correct (EGA or VGA) Resolution Setup CD and reboot the game. When the drive opens, remove the CD and reboot again.

Audio Troubleshooting

Problem	Possible Cause	Possible Solution
No Audio (Video and Controls are Working)	Volume is Set too Low	Adjust volume settings from the Operator Menu. Verify that the Attract Volume is ON.
	Faulty Wiring	Turn off the cabinet. Verify that audio wires are firmly connected to the computer, I/O PCB, and speakers. Verify no audio wires are frayed or shorting to ground.
	Blown Speakers	Remove the speaker grill covers, and visually inspect each speaker.
	No Power to the I/O PCB	Make sure the power cable is firmly connected to the PCB and the power port on the back of the computer. Make sure the red LED is lighted on the PCB.
	Faulty Audio AMP on I/O PCB	To verify audio is working at the computer, connect stereo headphones to the **green** computer audio port. Test the PCB in another working cabinet.
Audio is Distorted or Muffled	Blown Speakers	Remove the speaker grill covers, and visually inspect each speaker.
	Faulty Wiring	A weak or low muffled sound is a sign of reversed speaker wires. Try swapping the wires on one speaker.
No Sound from One Speaker (Faulty Sound Channel)	Faulty Audio AMP on I/O PCB	To verify audio is working at the computer, connect stereo headphones to the **green** computer audio port. Test the PCB in another working cabinet.
	Blown Speaker(s)	Remove the speaker grill and visually inspect each speaker. Try adjusting the volume levels.
	Faulty Wiring	Turn off the cabinet. Verify that audio wires are firmly connected to the computer, I/O PCB, and speakers. Verify no audio wires are frayed or shorting to ground.
Audio hum	Fault in AC Wiring	A constant low hum in the speakers can be caused by a ground loop, or reversed AC line and neutral wires to a component such as a power supply.

Control Troubleshooting

Problem	Possible Cause	Possible Solution
No Trackball or Button Functions (Audio is working)	Faulty USB Cable	Verify that the USB Cable is firmly connected from the computer to the I/O PCB. Try a new USB cable
	Faulty I/O PCB	Test the I/O PCB in another cabinet.
Buttons Do Not Work	Faulty Micro Switch	Replace the micro switch on the affected button. Verify that the wires are connected to the correct spades on the micro switch (see Figure 20 on page 29).
	Faulty Wiring	Turn off the cabinet. Verify that all the wires are firmly connected to the buttons and I/O PCB. Verify that no wires are frayed or improperly shorting to ground.
	Faulty I/O PCB	Test the I/O PCB in another cabinet.

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Problem	Possible Cause	Possible Solution
Trackball Does Not Work	Faulty I/O PCB	Test the I/O PCB in another cabinet.
	Faulty Wiring	Verify the trackball in a working cabinet. Verify that no wires are frayed or improperly shorting to ground.
Sloppy or Poor Trackball Response	Faulty TTL Sensors or Dirty or Worn Parts in Trackball	Refer to *Trackball Service* on page 27 for instructions on disassembling the trackball to clean or replace parts. Check the Trackball RPM in a Practice game.

Miscellaneous Troubleshooting

Problem	Possible Cause	Possible Solution
Cabinet Gets Very Warm	Faulty Ventilation Fan	Verify that the ventilation fan is working. Replace the fan if worn or spinning slowly.
	Ventilation Holes on Cabinet are Blocked	Make sure you have proper clearance around the ventilation fan, and all ventilation holes are clear of dust and debris so that air can flow freely.
Marquee Lamp is Faulty or Intermittent	Faulty Fluorescent Tube	Check the fluorescent tube for darkened or cracked ends. Replace the fluorescent tube if it looks worn.
	Faulty Fluorescent Fixture	Verify the fluorescent tube pins make a good connection with the lamp fixture. Check the ballast for proper operation.
Wrong Number of Credits Given When money is Inserted	Incorrect Setting in Operator Menu	Verify the Coin settings from the Operator Menu, and adjust them as necessary.
	Faulty Wiring	Turn off the cabinet. Verify that all the wires are properly connected to each coin mech or Bill Validator. Verify that no wires are frayed or improperly shorting to ground.
Game Will Not Accept Coins	Faulty Coin Mech	Verify the coin mech is not jammed. Make sure the mech is properly aligned and latched to the coin door.
	Faulty Ground Wire	Make sure the coin door is securely connected to ground.
Dollar Bill Acceptor not working	Incorrect Dipswitch Setting	Set dipswitches for Long Pulse or Gaming (***not*** Short Pulse or Vending).
	Faulty Bill Validator	Verify the bill validator is powered ON and working. If the bill validator is faulty, it will usually blink an error code on the inside of the coin door.
No power	Power Strip not Plugged in or Turned Off	Make sure the power indicator light on the power strip is on. If it is off, make sure the connections to the AC power plate are secure and the power strip ON/OFF switch is ON.
	Cabinet not Plugged in or Turned Off	Make sure the Cabinet AC Power Cord is firmly connected to the power plate and an active AC outlet, and the cabinet ON/OFF switch is ON.
Network Connection Problems	Check Server Status Page	Make sure the IP displayed is **not** 127.0.0.1. If it is, DHCP is failing to assign an IP address. Text on this screen is green if the connection is working.
No Connection to One Server	Server Maintenance being done	If the Server Status screen shows no connection to just one of the Puck Off servers, the server may be down for maintenance and should be working shortly.

Chapter 10 — Diagrams and Schematics

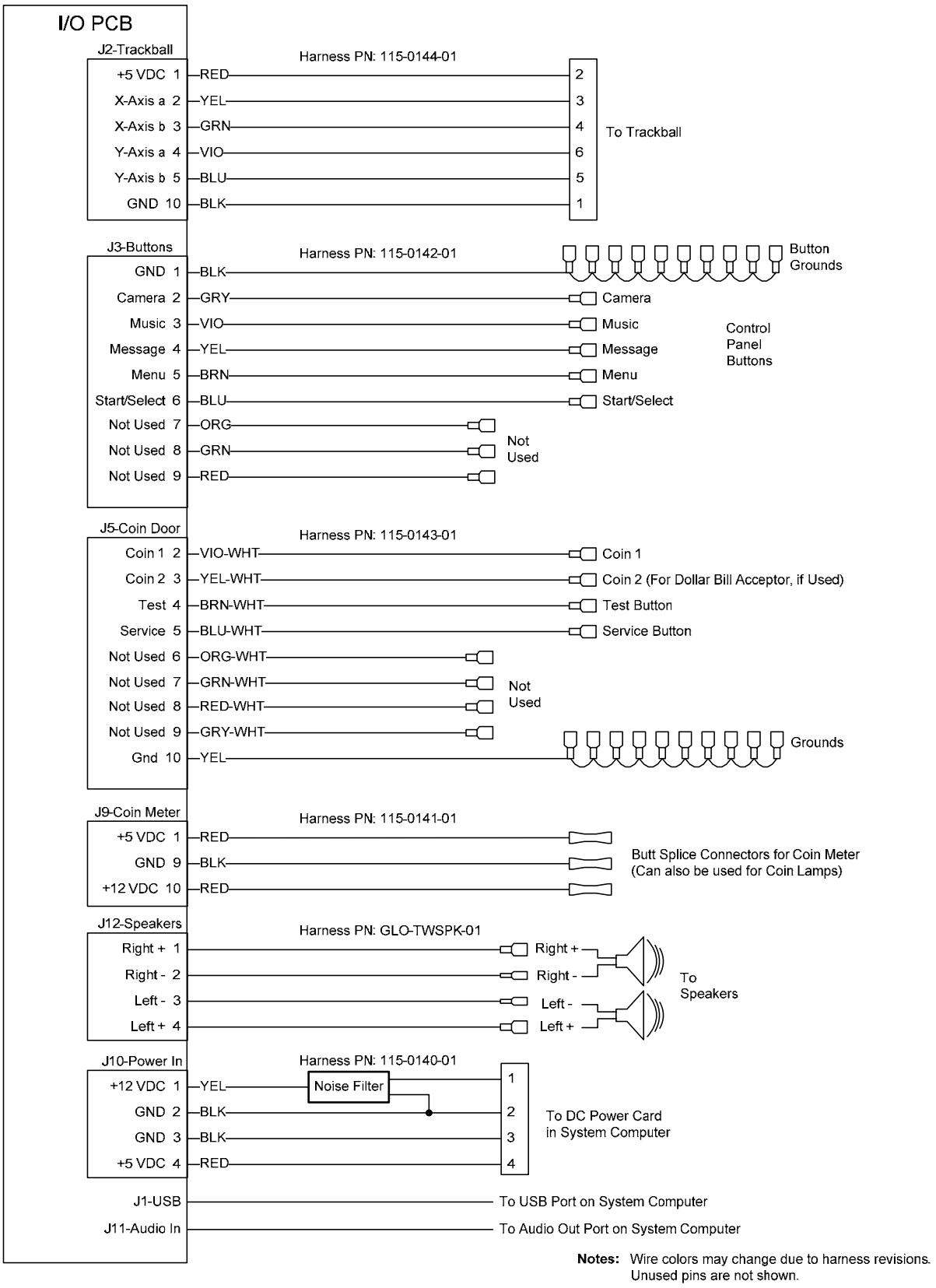

Figure 22. Detailed Wiring Diagram (GFX I/O PCB)

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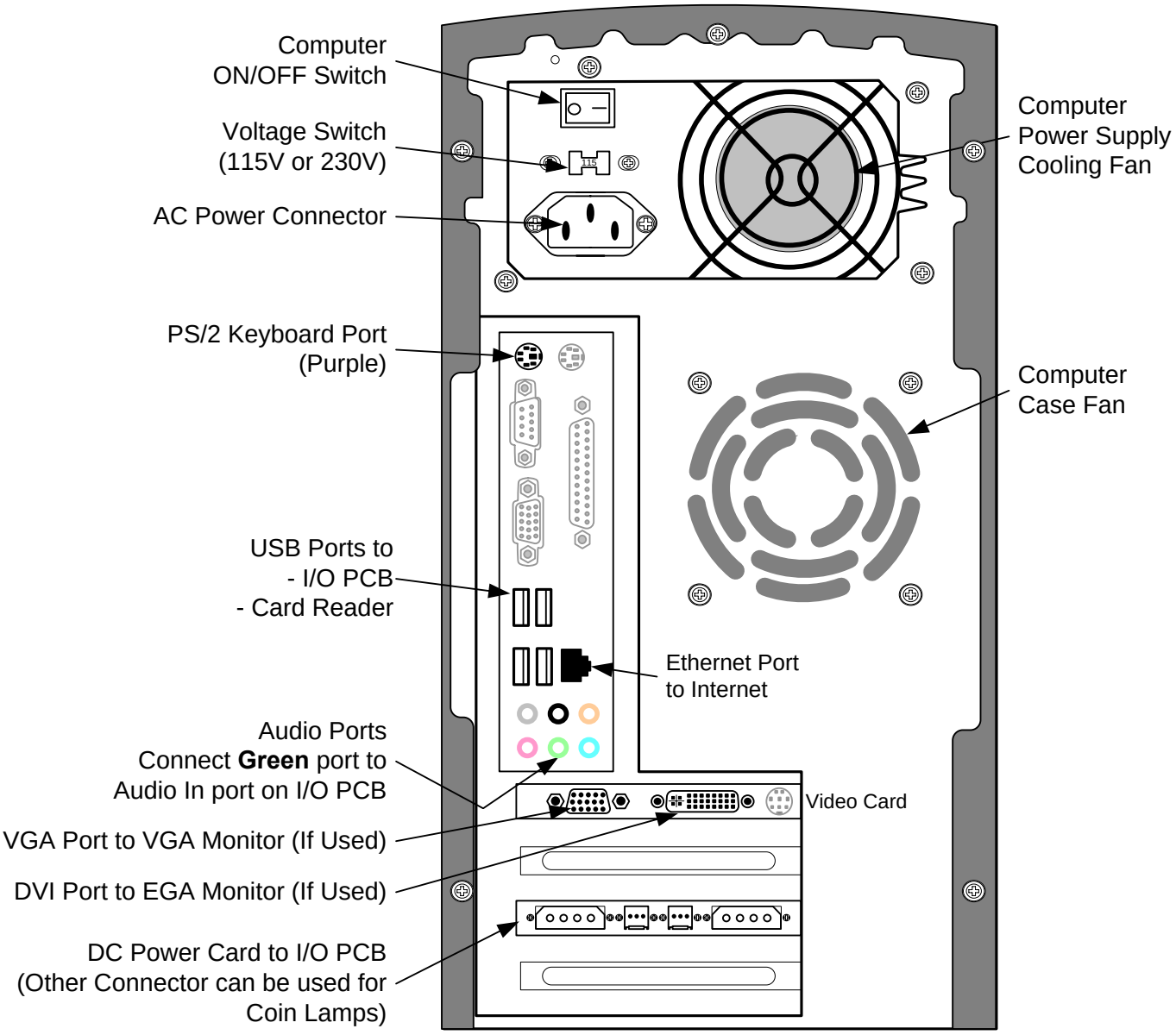

Figure 23. Computer Rear Panel Diagram

Warranty Service

If you should require warranty service, please contact your authorized GLOBAL VR® distributor.

LIMITED WARRANTY

GLOBAL VR® warrants that its computer circuit boards, hard drives, power supplies, monitors, displays, controls, sensors, and mechanical structures are free from defects in materials and workmanship under normal use and service for a period of ninety (90) days from the date of shipment.

All software and accompanying documentation furnished with, or as part of the Product, is supplied "AS IS" with no warranty of any kind except where expressly provided otherwise in any documentation or license agreement furnished with the Product.

During the warranty period, GLOBAL VR® will, at no charge, repair the Product, provided:

- Purchaser believes that the Product is defective in material or workmanship and promptly notifies GLOBAL VR® in writing with an explanation of the claim;
- All claims for warranty service are made within the warranty period;
- Products are returned adequately packed and freight prepaid to GLOBAL VR®'s designated service center;
- GLOBAL VR®'s inspection or test of the Product verifies to GLOBAL VR®'s satisfaction that the alleged defect(s) existed and were not caused by accident, misuse, neglect, unauthorized or attempted repair or testing, unauthorized modification, incorrect installation, vandalism, failure to follow the maintenance schedule or procedures; or operation in out-of-specification environmental conditions.

GLOBAL VR® will return the repaired Product freight prepaid to the Purchaser. All freight costs associated with replacement of warranty parts after expiration of the original warranty period are the responsibility of the Purchaser. GLOBAL VR® is not obligated to provide the Purchaser with a substitute unit or on-site service during the warranty period or at any time. If after investigation GLOBAL VR® determines that the reported problem was not covered by the warranty, Purchaser shall pay GLOBAL VR® for the cost of investigating the problem at its then prevailing per incident billing rate. No repair or replacement of any Product or part therein shall extend the warranty period as to the entire Product. The warranty on the repaired part only shall be in effect for a period of ninety (90) days following the repair or replacement of that part or the remaining period of the Product parts warranty, whichever is greater.

Purchaser's exclusive remedy and GLOBAL VR®'s sole obligation is to supply or pay for all labor necessary to repair any Product found to be defective within the warranty period and to supply, at no extra charge, new or rebuilt replacements for defective parts. If repair or replacement fails to remedy the defect, then, and only in such event, shall GLOBAL VR® refund to Purchaser the purchase price for said Product. Purchaser's failure to make a claim as provided above or continued use of the Product shall constitute an unqualified acceptance of said Product and a waiver by Purchaser of all claims thereto.

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Technical Support

Hours: 7:00AM–5:00PM Pacific Time, Monday–Friday
Phone: 408.597.3435
Fax: 408.597.3437
E-mail: techsupport@globalvr.com
Website: http://service.globalvr.com
Extended Service Hours: Monday–Friday 5pm—Midnight
Saturday & Sunday 7:00am—Midnight Pacific Time

Free telephone, e-mail, and online support are provided for systems during the warranty period. GLOBAL VR® Technical Support can help you troubleshoot problems and diagnose defective parts. We can also answer questions about the operation of your game.

When you contact Technical Support, please provide the information listed below to assist the Technical Support representative in solving your problem quickly. For your convenience, space is provided to write important numbers.

- Cabinet Serial Number (from label on cabinet rear): _____
- Hard Drive Serial Number (from System Info screen): _____
- Game Version (from System Info screen): _____
- IP (from System Info screen): _____
- Your mailing address and telephone number.
- A summary of the question or a detailed description of the problem with your cabinet.

The additional information listed below, as applicable, may assist Technical Support in solving your problem quickly.

- Specific error message
- Any changes made to the system
- Date of latest install or upgrade
- For game-play issues, the game mode and number of players

To comment on this manual, please e-mail: techpubs@globalvr.com